

Your Guide to Calculating Total Printing Costs (TCO)

Avoid burdening your company with years of unnecessary expenses



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The ultimate guide to assessing your printer's or multi-function printer's total cost of ownership

Did you know that printing is typically the third-highest business operating expense, behind rent and payroll?

Yet, despite printing being such a significant ongoing expense, many businesses are still purchasing printers and multifunction printers (MFPs) simply based on sticker price, without considering what impact these devices can have on their operating expenses over their lifetime.

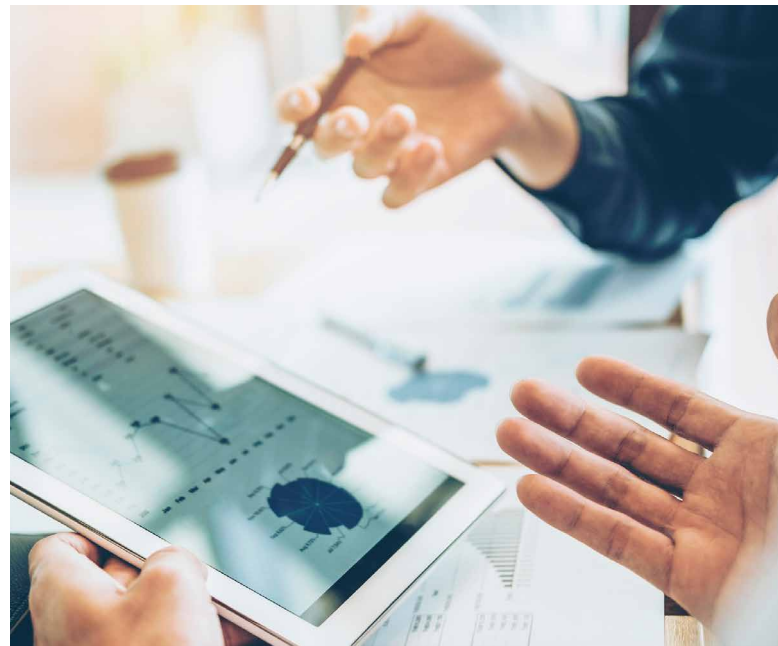
While purchasing a cheaper device may look good on your capital expenditure report, the truth is you might be saddling your company with high running costs, time-wasting user interventions and a large amount of office waste that's harmful to the environment.

Fortunately, you can avoid burdening your company with years of unnecessary expenditure and wasted time by asking one

crucial question before you purchase any new device: what is the total cost of ownership?

We highly recommend that you don't make any purchasing decisions about printers or MFPs until you've read our guide from cover to cover!

That one decision could end up costing your company a whole lot more than you bargained for.



In this ultimate guide, we'll tell you:

- + What TCO is, and why it's so important to your business
- + How to calculate a device's TCO
- + What you need to consider when working out the TCO
- + How to reduce your device's TCO



What is the total cost of ownership?

The Total Cost of Ownership (TCO) is, in short, what a printer or MFP really costs your business over its entire lifetime. In other words, on top of the upfront costs of purchasing and setting up the machine, you're also factoring what it costs to operate and maintain the machine over the months and years you can expect to own it.

There are many factors that can impact on a device's TCO, such as:

Cost and yield of consumables (e.g. toner)

- **Electricity consumption**
- **Paper consumption**
- **Maintenance costs**
- **Amount of user intervention**

By calculating your device's TCO before you make a purchase, you can get a clear picture of the full financial impact of that device on your bottom line, and foresee any unnecessary expenditure before you make a commitment that will likely last several years.

Things to consider when calculating your device's TCO

While consumables are typically the biggest component of a device's TCO, there are many other factors that have to be considered when trying to determine the TCO of a device. Before you sign on the dotted line, be sure to ask yourself and your supplier the following questions.

1. What are the needs of my business?

A. How many pages do you print or copy per month?

If you have implemented a [network device management solution](#), this information will be readily available. If not, tracking your paper purchases will give you a fairly good estimate of your print and copy numbers.

B. How many colour pages do you print or copy per month?

According to Gartner Group, printer and MFP supply budgets are actually growing at 20–40% per year, partially because of the rise in the volume of colour prints of sophisticated graphics. That is why, even in this digital era, it is essential to consider your colour print output, as it will have a significant impact on your device's TCO.

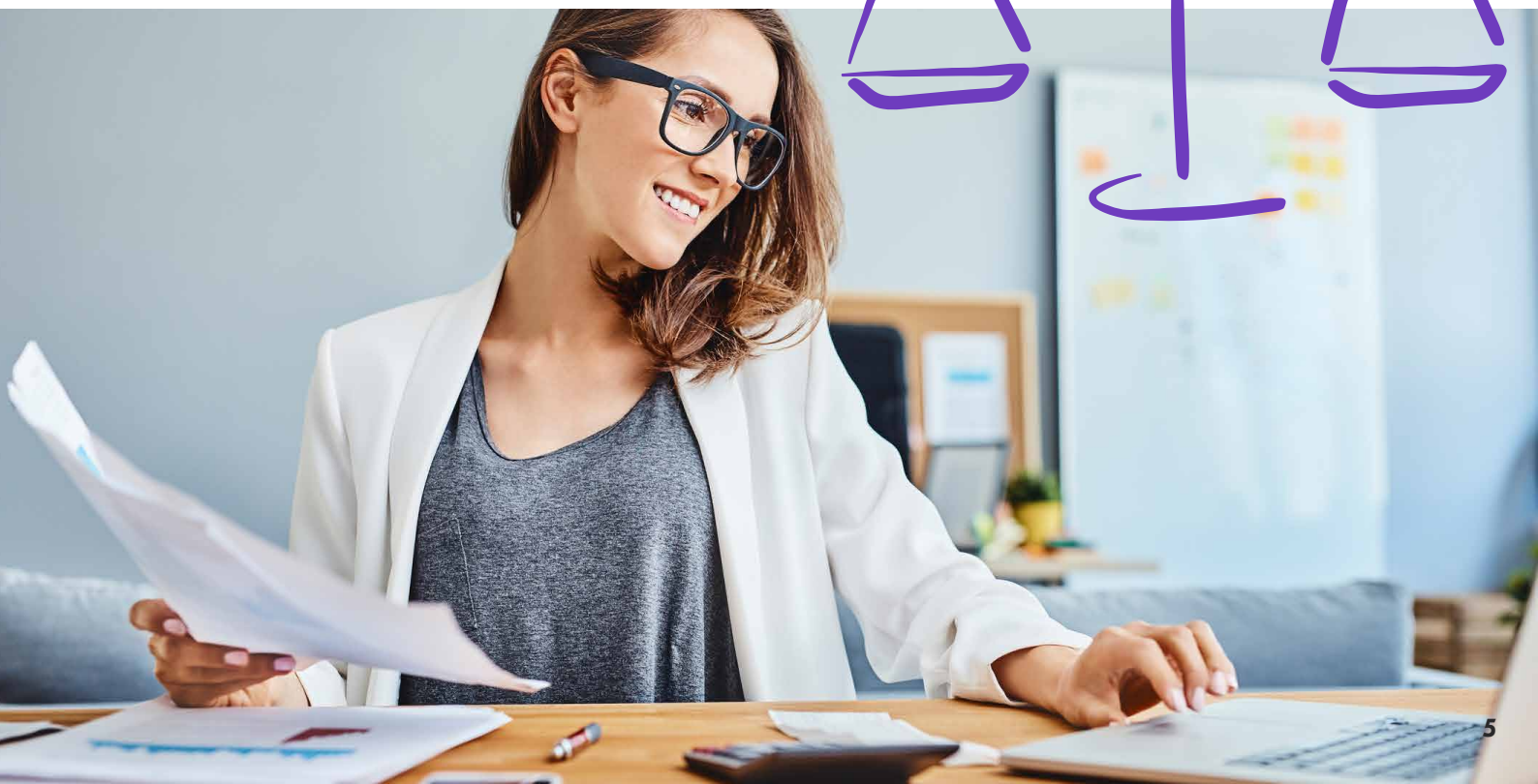
Your monthly colour output will be more difficult to pinpoint if you don't have a network device management solution tracking your output, but a rough estimate is better than nothing. If you have no clue what your

colour output is, you may need to do a small survey to ask staff to assess the percentage breakdown of colour to black-and-white printing they're doing.

C. How long do you plan on owning the device?

Before you make a purchase, it's advisable to have an idea of how long you intend on keeping the device. Most businesses keep their machines for an average of two to three years. We don't recommend keeping a device for more than four years, as a device this old will probably be in need of regular maintenance and will also likely no longer be compliant to energy-efficiency standards.

These three numbers will not only ensure you have an accurate TCO, they will also help enormously when considering the specifications of the devices and whether or not they are able to cater to the needs of your business.



2. How much does the device cost to buy?

Now that you've worked out your typical monthly output, you can use that information to narrow your list of potential devices down to those that are most appropriate to your needs. After all, there's no use spending lots of money on a high-volume MFP if your business's print output doesn't warrant it.

The next thing to consider is, how much does it cost to buy? Most people simply compare the sticker prices, but this is not necessarily an accurate representation of the true cost of acquisition. There are other costs that must be factored in.

The cost of advanced features

While it's tempting to get the model with the latest whizz-bang features, it's important to consider what sort of features your business actually requires, and what it doesn't, as paying for redundant features is an unnecessary cost. For example, does the device need a very fast output speed? If you have a large company with lots of users competing for device time, then, yes, a faster output speed would be highly beneficial to maintaining an efficient workflow. But if you're a small business, it's perhaps wiser to spend less on a slightly slower machine.

It's also worth considering if the device has features that can have a positive effect on the TCO in the long term. For example, all of Kyocera's new devices come with a 'draft mode' setting, which allows documents, such as emails, to be printed using half the amount of toner. Not only does this mean you spend less money on toner, it also means you're generating much less waste, which [is better for the environment](#).

Delivery and installation costs

These are often not considered until after the decision to purchase a machine has been made. Make sure to ask how much delivery and installation will cost upfront and factor it into your decision. Don't get caught out by unforeseen costs!

Extended warranties

While most devices come with warranty, some businesses choose to purchase an extended warranty. It's worth taking the time to consider if this is even worthwhile, as the warranty may well cover the device's lifespan anyway. If you decide it is worth it, then this must also be factored into the acquisition price.

However, if you really want to minimise the downtime of your devices, we would recommend considering a service level agreement (SLA) instead, for greater peace of mind.

Out-of-the-box capabilities

Most devices come with starter cartridges, so find out what comes in the box, and how many pages they yield. This should be factored into your TCO calculations.



3. How much does the device cost to run?

While consumables are typically the biggest component of a device's TCO, there are many other factors that have to be considered when trying to determine the TCO of a device. Before you sign on the dotted line, be sure to ask yourself and your supplier the following questions.

It can be difficult for small and medium businesses with limited capital expenditure budgets to look beyond the initial purchase price of a given piece of technology. In businesses that live and die by their cash flow, a typical approach is to buy the cheapest product that meets the minimum requirements for a given task.

The problem is many suppliers in the printer and MFP industry are well aware of this approach. In order to capitalise on this, they employ the "razor and blades" business model: the initial hardware is frequently sold cheaply – even at a loss – in order to lock in future sales of high-priced toner, printing drums, paper and other consumables.

That is why it is essential to work out a device's TCO before purchasing, as you'll often find devices that are cheaper to purchase upfront end up costing businesses a lot more in the long run. It's not uncommon for the cost of consumables over the life of a printer or MFP to be four or more times greater than the initial purchase cost, especially as more and more companies move to colour and graphics-heavy printing.



Toner and drum replacement are typically the largest components of a device's TCO.

The number of consumables the device needs

Did you know that not every device has the same amount of consumables? Most devices use cartridges that integrate a print drum, developer and toner – that's three things you have to replace every time your printer runs out of toner. Some devices can have up to 8 different components that require periodic replacement, including the four toner cartridges, print drum, fuser unit, waste toner collector and transfer belt.

Kyocera's ECOSYS devices, however, have a durable print drum that typically lasts the lifespan of the machine, meaning the only consumable that needs to be replaced is toner.

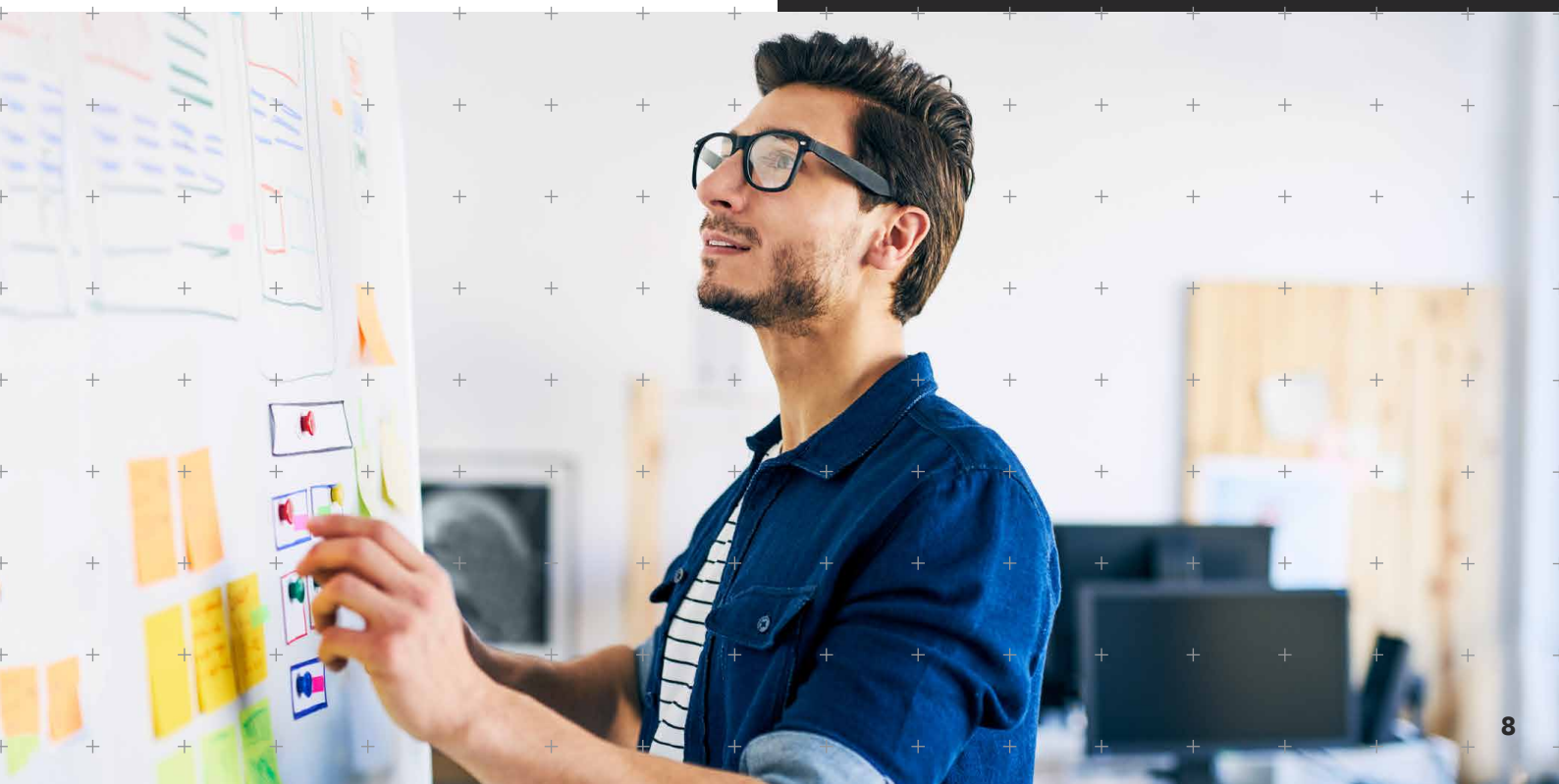
Not only does this make the ECOSYS devices much cheaper to operate over their lifetime, it also cuts down dramatically on waste, which is much kinder to the environment. The durable materials used to make the ECOSYS devices also makes them much more reliable, thereby requiring much less maintenance (and service costs) than other devices.



Conventional toner kit



Kyocera toner kit



The cost and expected lifespan of the consumables

Not all toner cartridges and drums are created equal. Buyers are sometimes lured by the prospect of low-cost consumables, only to find that the component needs to be changed with unacceptable frequency.

The good news is that most printer and MFP vendors now have comparable usage models, which makes lifespan comparisons a lot easier. Typically, consumable lifespans are listed in standard (A4) pages with a given percentage of coverage. For example, a toner cartridge may have a listed lifespan of 6,000 pages at 5% coverage. Five per cent is considered a good average for typical text-based printing. Users with heavy graphics requirements, however, may see lifespans that are considerably shorter than advertised. Printing out graphics-heavy web pages may, for example, require as much as 30% coverage.

It is also fairly common for printer and MFP vendors to offer multiple versions of the same component. For example, the vendor may offer both a low-yield and high-yield toner cartridge. Buying high-yield cartridges tends to be considerably more economical, and therefore better for the TCO.

4. What kind of service does the supplier offer?

Did you know that, according to the Gartner Group, 23% of calls to the IT help desk are about print-related issues? That's a lot of time (and money) your IT department is spending troubleshooting printers and MFPs.

That's why the service and support offered by the manufacturer should be a major factor in any purchasing decision, particularly for larger businesses. When a device breaks down, you need to know you can get someone there to fix the problem quickly - before downtime becomes a major drain on productivity.

Do some research into your supplier, and see whether they have a reputation for being reliable and punctual when it comes to responding to service calls.

Often, it is worth investing in [managed print service \(MPS\)](#), where your supplier manages your entire document output.

These comprehensive services usually include a priority SLA, ensuring technical support is always on-hand when you need it, thus minimising downtime and freeing up your IT department for more strategic matters.

Key questions to ask your supplier

- ✓ Is there a support line for the product?
- ✓ What hours is service available?
- ✓ What's the average response time in your particular area?
- ✓ What kind of training does the vendor's channel receive? Can you be guaranteed consistent service from them too?
- ✓ Will the warranty cover the expected lifespan of the device?



5. How much user intervention is required?

Does this sound familiar? You go to the printer to retrieve your printouts, only to find that the machine is out of toner, and your print job is now stuck in a serious backlog that is steadily growing while someone seeks out some replacement toner (which may or may not be on hand). Finally, the cartridge gets replaced – and now you have to sit around, twiddling your thumbs, waiting for the machine to get to your job in the queue.

A managed print service can also help to reduce user intervention, by relieving employees of administrative tasks related to the devices, such as ordering toner, as well as by ensuring regular maintenance is conducted so the machines are always running smoothly. Less time managing the machine means more time your employees can spend focusing on what's really important.

The more time spent by staff filling paper trays, changing toner cartridges and drums, ordering replacement supplies, dealing with waste and standing around waiting for prints to finish, the less real work gets done.

Longer-life consumables can help reduce the number of human interventions, as well as the cost. Large paper trays and expansion options can also help to decrease the time users have to spend on the device to keep it chugging along.



6. How much power does it consume?

It can be easy to forget about how much power your device is eating up, but it's not only important for your bottom line, it's also important in terms of creating a more [environmentally friendly office](#).

The easiest way to check whether a device has a relatively low power consumption is to see whether it is Energy Star compliant, which means it meets international standards of energy efficiency. This can be done by checking the [Energy Star's](#) website, navigating to the Product Finder, and searching for the model number.

The Energy Star website also provides the device's typical electricity consumption (TEC) value, which is listed in kWh per week. This

value can be used to compare the energy performance of devices.

All Energy Star-compliant devices are required to switch from standby mode to sleep mode, in which the device is consuming a very small amount of power, after one hour of inactivity at the most. However, it's worth configuring your devices to switch to sleep mode after the shortest practical interval (usually 5 minutes), to maximise cost-savings.

In order to make the most of sleep mode without compromising on usability, it's worth also considering how long devices take to print from sleep mode. This information is also provided on the Energy Star website.



ENERGY STAR CERTIFIED

Imaging Equipment

KYOCERA - M3645idn : ECOSYS M3645idn

Specifications

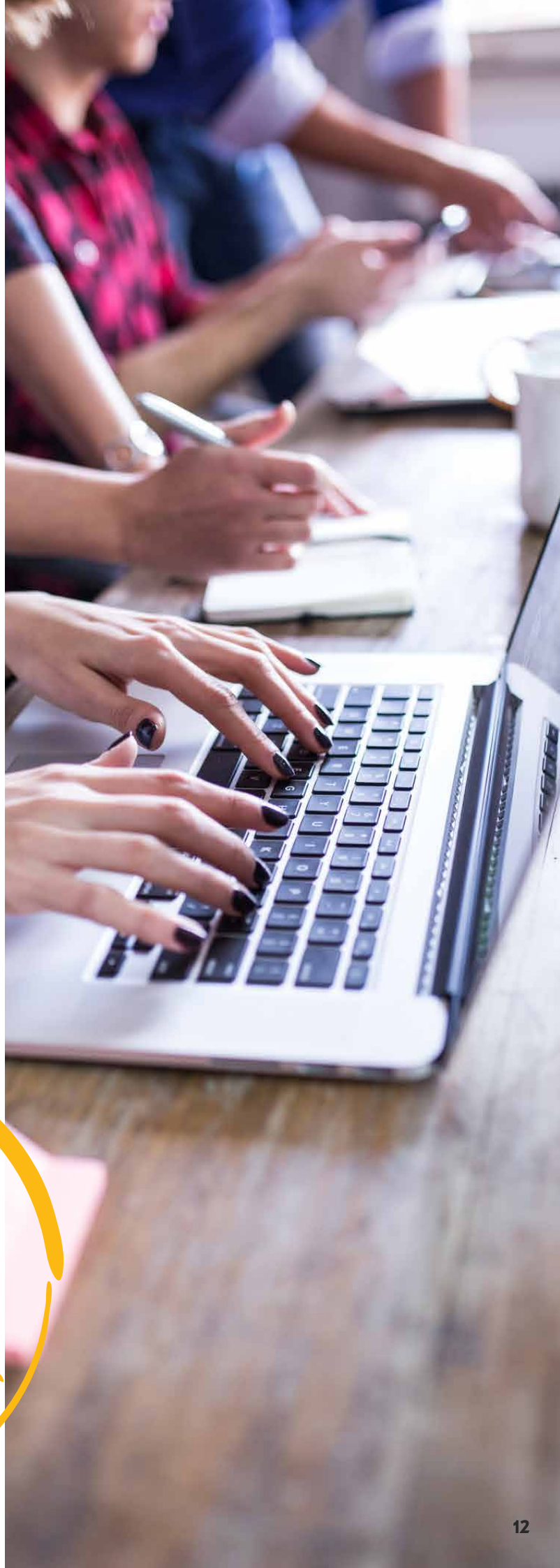
Brand Name:	KYOCERA
Model Name:	M3645idn
Model Number:	ECOSYS M3645idn
Type:	Multifunction Devices (MFD)
Marking Technology:	Electro-photographic (EP)
Color Capability:	Monochrome
Print Speed (ipm or mppm):	47
Page Format Size:	Standard
Typical Electricity Consumption (TEC) (kWh/wk):	0.63
Markets:	United States, Switzerland, Taiwan, Japan, Canada
ENERGY STAR Certified:	Yes

7. What kind of impact does the device have on the environment?

As we've already touched on in this guide, a device that is more energy-efficient or environmentally friendly can often also be cheaper to operate, thereby having a positive impact on your total business costs.

Purchasing a device with less consumables means you're generating less waste, and therefore spending less money on waste management. The same applies to purchasing high-yield consumables. A more energy-efficient device is going to save on electricity costs. Devices made mindfully with durable materials (such as Kyocera's ECOSYS devices) are going to experience less downtime and require less maintenance, as well as cut down on the amount of e-waste being generated.

Cutting down on paper consumption is a green measure that can impact the lifespan of your device, as decreasing the volume of output means less wear and tear. It's therefore worth considering the printer drivers and software that comes with the device, and whether these have a setting that can help to reduce paper consumption.



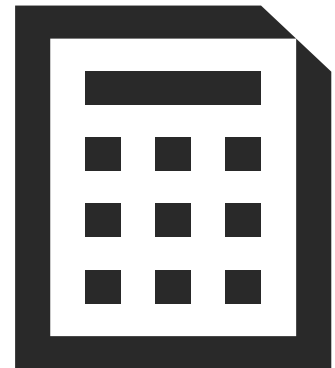
How to calculate your printer TCO

In order to calculate a basic TCO, you'll need to be able to answer the following questions, already touched upon in this guide:

- ✓ What are the needs of my business?
- ✓ How many pages do we print/copy a month?
- ✓ How many colour pages do we print/copy a month?
- ✓ How long do we intend on keeping our device?
- ✓ How much does the device cost to buy? Does this include a toner starter kit?
- ✓ If yes, how many pages does the starter kit yield?
- ✓ How much does the device cost to run?
- ✓ How many consumables does it need?
- ✓ What do they cost?
- ✓ How many pages do they yield?

Here's an example we can use to calculate the TCO:

1. **What are the needs of my business?**
 - a) How many pages do we print/copy a month? 5000
 - b) How many colour pages do we print/copy a month? 30%
 - c) How long do we intend on keeping your device? 3 years/36 months
2. **How much does the device cost to buy?** \$1000
 - a) Does this include a toner starter kit? Yes
 - b) If yes, how many pages does the starter kit yield? 5000 pages
3. **How much does the device cost to run?**
 - a) How many consumables does it need? 4 (1 black toner, 3 colour toners)
 - b) What do they cost? \$200 each
 - c) How many pages do they yield? Black toner = 12,000 pages.
Colour toners = 10,000 pages



First, let's work out our output over the device's lifespan (bearing in mind that colour pages also use black toner):

$5000 \text{ pages} \times 36 \text{ months} = 180,000 \text{ pages}$

$180,000 \text{ pages} \times 0.3 = 54,000 \text{ colour pages}$

Now, let's work out how many consumables the device will use over its lifespan:

$180,000 \text{ pages} - 5000 \text{ pages (starter kit)} = 175,000 \text{ pages}$

$175,000 \text{ pages} \div 12,000 = 14.58 \text{ black toner cartridges}$

$54,000 \text{ colour pages} - 5000 \text{ pages (starter kit)} = 49,000 \text{ colour pages}$

$49,000 \text{ pages} \div 10,000 = 4.9 \text{ colour toner cartridges}$

Rounding up, the device will use 15 black toner cartridges and 15 colour toners (as there are 3 colour toners required) over its lifespan.

Now we can work out the TCO:

Cost of device: \$1000

Cost of black toner: $15 \times \$200 = \3000

Cost of colour toners: $15 \times \$200 = \3000

$\text{TCO} = \$1000 + \$3000 + \$3000 = \7000

To make this more accurate, you could also factor in other known costs such as delivery, installation and extended warranty.

To make it easier to compare devices and work out budgets, we can also generate a cost per month, or cost per page:

$\$7000 \div 36 \text{ months} = \$194.44/\text{month}$

$\$7000 \div (180,000 + 54,000 \text{ pages}) = 0.03 \text{ cents/page}$

Tips on how to reduce your device's TCO

While doing your research and taking measures to ensure you get the right device for your business in the first place is the best way to minimise TCO, there are other things you can do to keep your TCO down.

Monitor your output and ongoing costs

According to a report released by the Gartner Group several years ago, 90% of companies don't know how many printers they have, or how much they are spending on print. Don't be another statistic!

The first step towards reducing your TCO is knowing exactly how much you're printing, and how much you're spending. Monitoring your paper and consumable purchases is a relatively easy way to get a good handle on this, but if you want a more precise overview

of your output, such as how much colour printing you're doing, then a document management solution can provide this information at the touch of a button.

Once you've established a baseline, you can then work on making improvements.

Do a print audit

When you install a print system, you check that every user has access to the print functionality that they need. But businesses change: employee numbers grow or shrink, people adopt new ways of working, and new applications change the way that people use the devices. If your printing network has been in place for more than a year, it's a good idea to carry out a print audit to make sure you have the optimum set-up.



You might find there are devices being overused, in which case you might need to invest in an extra device in order to maintain productivity. You might find devices are being underused, in which case you might consider consolidating to a single device shared between more users. You might find there are devices receiving an inordinate amount of service calls, in which case it might be time to think about an upgrade.

Make use of your driver's settings or get a document management solution

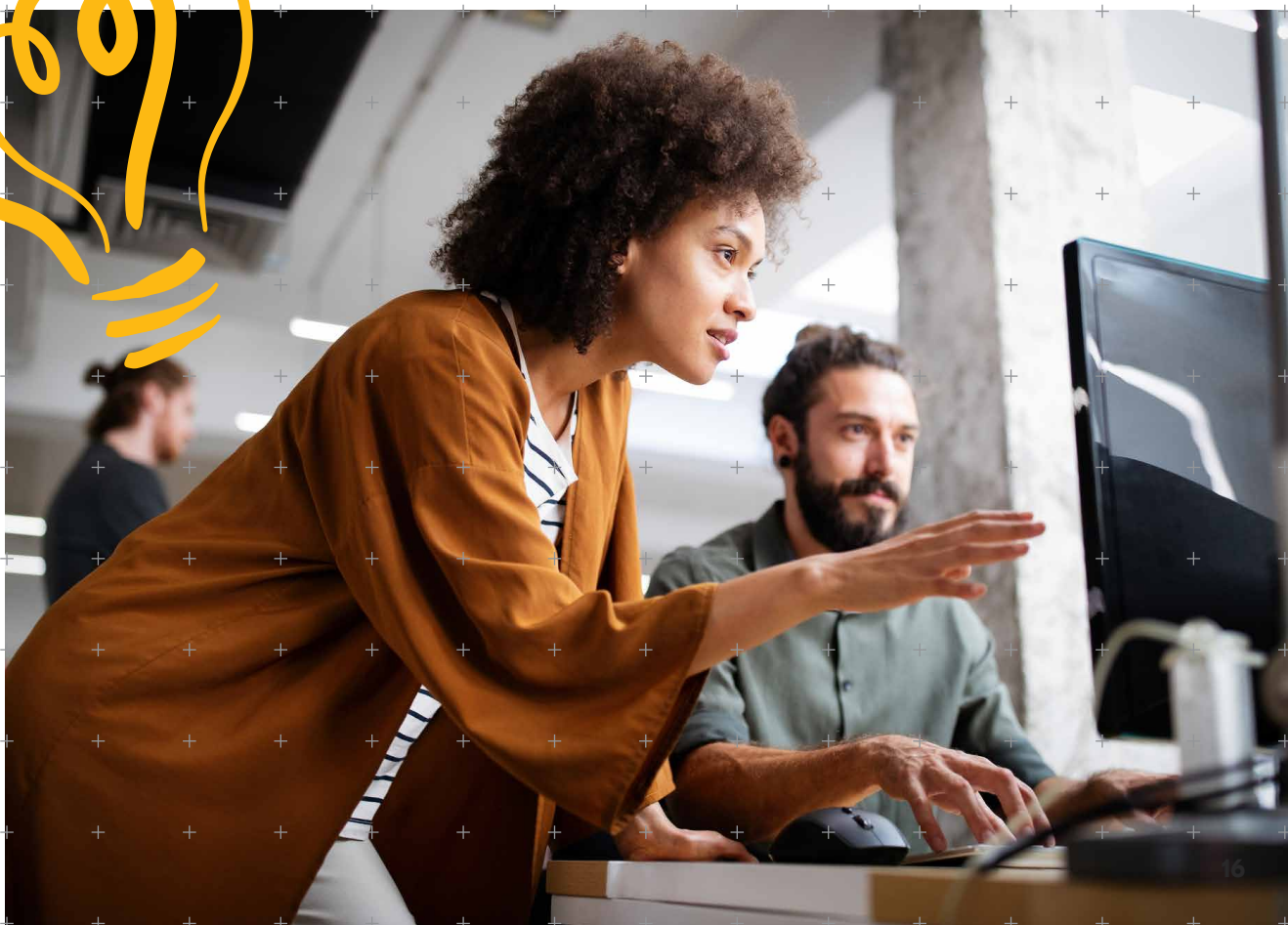
There's a lot of unnecessary printing and copying that goes on in any given business. People accidentally select the wrong settings; they forget to collect their printouts; they print things in colour that could just as easily be in black and white. All these behaviours result in

unnecessary use of paper and consumables, which means more wear-and-tear and more waste. But these behaviours are difficult to police.

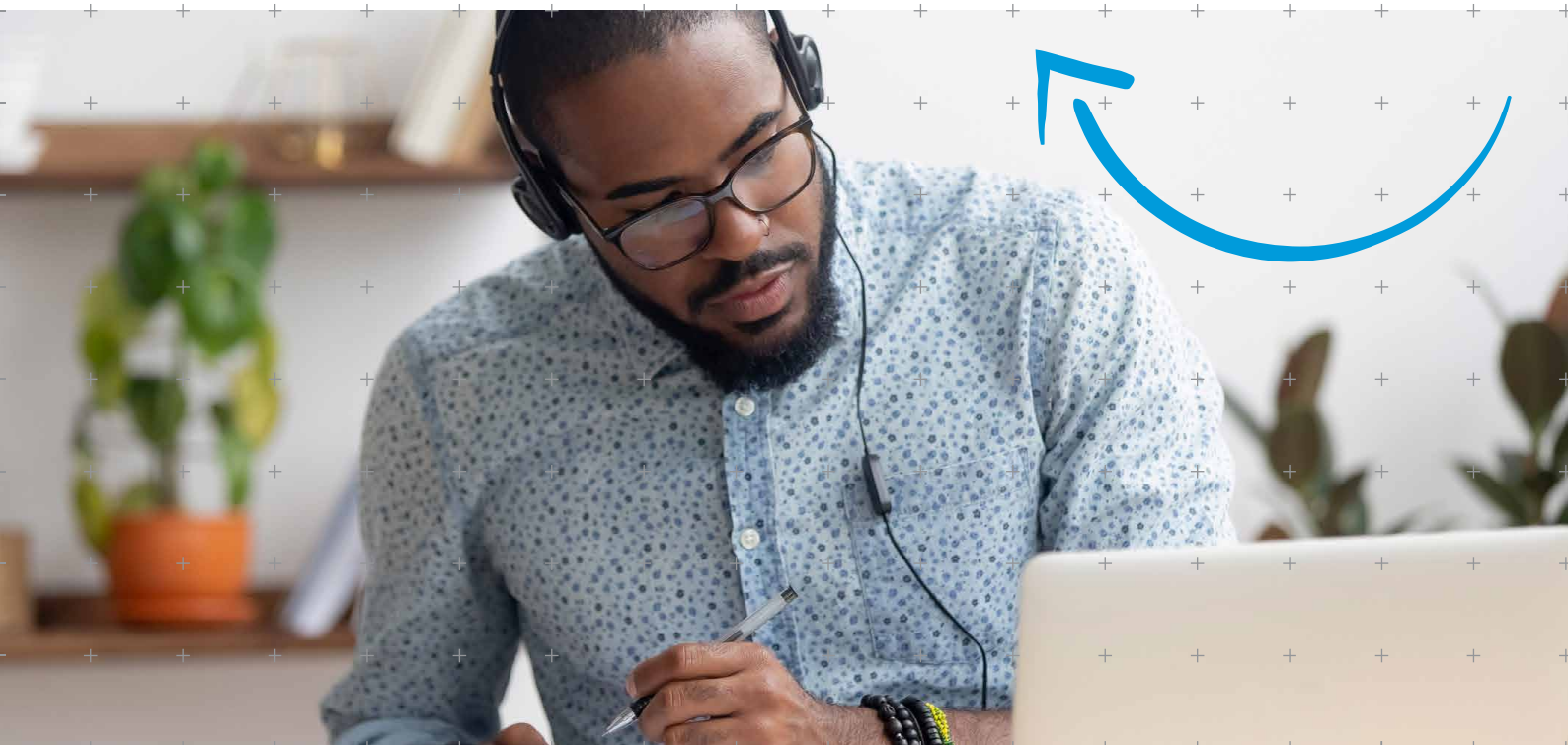
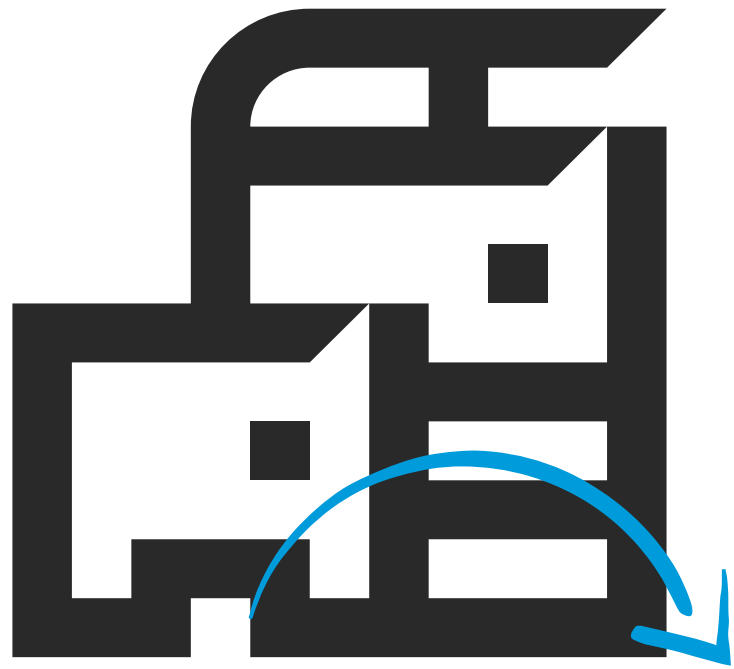
Fortunately, technology can help.

Printer drivers often come with settings to help you to minimise unnecessary output and waste. For example, limits can be imposed on how many pages certain employees can print, or on their ability to print in colour. You can also set how certain documents are printed; for example, emails could always be printed in draft mode, so they use half the amount of toner. You can also ensure the most appropriate device is used for a print job by automatically routing large jobs to lower-cost, more energy-efficient departmental printers and copiers.

There are also many document management solutions that not only help reduce document output, but also increase security and improve workflow.



Print-release software, for example, allows print jobs to be released at the device by the user. Because you can release the job from any device that is not being used at the time, you're not wasting time waiting for the device to get to your job in the queue. It also eliminates unnecessary printing – no longer do uncollected printouts sit forlornly in the tray, waiting to be thrown away. Improving workflow with such software can also help eliminate the need for devices with high TCOs, such as personal printers.



Invest in a managed print service

A managed print service (MPS) is the fastest and easiest way to fully optimise your entire document environment, thereby minimising waste and ensuring your document workflow is as efficient as possible.

First, your current output is carefully assessed, then a custom solution that specifically caters for your business is designed and implemented. User training is part and parcel of an MPS, and supply management and maintenance become

automatic, so you no longer have to handle these administrative tasks in-house. MPSs also involve regular assessment, so you can feel confident your print environment is always operating at its peak.

By ensuring that you get the most appropriate device for your needs, and that you have a solution that keeps unnecessary output and waste at an absolute minimum, an MPS can reduce the amount of consumables and maintenance required, and prolong the life of your device – all of which brings your TCO down.



Conclusion

In the end, a printer or an MFP is not simply a one-off purchase. It is an ongoing investment, and one that can have a significant impact on operational costs, productivity and your office's environmental footprint. Make sure you make the best investment for your company by considering all the factors that can contribute to a device's TCO.

It's also important to bear in mind the device's TCO throughout its lifespan. Regular monitoring and auditing of your printing environment and the implementation of appropriate document management solutions can prevent inefficiencies from creeping in, and ensure your printing environment is always operating at its peak.

Want more information about our document management solutions or our managed print services?

Remember to ask:

1. What are the printing and copying needs of my business?
2. How much does the device cost to buy?
3. How much does the device cost to run?
4. What kind of service does the supplier offer?
5. How much user intervention is required?
6. How much power does the device use?
7. What kind of impact does the device have on the environment?



Contact Kyocera to discover your business solution

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